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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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BURNS DOANE SWECKER & MATHIS L L P
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EXAMINER

THOMPSON, T

ART UNIT

PAPER NUMBER

2873

DATE MAILED:

09/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/450,271

Applicant(s)

KUISEKO ET AL.

Examiner

Timothy J Thompson

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 21-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

Claims 21-24 are objected to because of the following informalities: They depend upon a later numbered claim(claim 25), claims should depend upon earlier numbered claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Braun (U.S. Patent No. 4,121,890).

Regarding claims 1, Braun discloses a lens element for focusing incident luminous flux at a predetermined position(fig 1, **24**), the lens element having a first convex surface(fig 1, **18**, col 4, lines 33 and 34) to the long conjugate distance side and a second convex surface(fig 1, **22**) and a luminous flux passing through a peripheral part of the first surface is reflected at a peripheral part of the second surface, is again reflected at a central part of the first surface(fig 1) imaged on an optical axis of the lens element(since it is imaged at the focal point

of the lens(fig 1, **24**) and the lens is symmetrical (as shown by the reflecting light in figure 1).

Regarding claim 7, Braun discloses a first plano surface (fig 1, **18**) to the long conjugate distance side and a second convex surface (fig 1, **22**) and a luminous flux passing through a peripheral part of the first surface is reflected at a peripheral part of the second surface, is again reflected at a central part of the first surface(fig 1) imaged on an optical axis of the lens element(since it is imaged at the focal point of the lens(fig 1, **24**) and the lens is symmetrical as shown by the reflecting light in figure 1.

Regarding claims 9, Braun discloses a lens element for focusing incident luminous flux at a predetermined position(fig 1, **24**), the lens element having a first convex surface (fig 1, **18**, col 4, lines 33 and 34, since surface can be curved it inherently could then be concave) to the long conjugate distance side and a second convex surface(fig 1, **22**) and a luminous flux passing through a peripheral part of the first surface is reflected at a peripheral part of the second surface, is again reflected at a central part of the first surface(fig 1) imaged on an optical axis of the lens element(since it is imaged at the focal point of the lens(fig 1, **24**) and the lens is symmetrical as shown by the reflecting light in figure 1.

Regarding claim 13, Braun discloses a lens element having a first convex surface (fig 1, **18**, col 4, lines 33 and 34, since surface can be curved it inherently could then be concave)to the long conjugate distance side thereof with a reflectance coating on the central portion(fig 1, **18**, col 2, lines 45-50) and a light admitting area at the peripheral of the reflective coating(fig 1, **16**), and a second

convex surface on the opposite side thereof(fig 1, 22) with a reflective coating on the peripheral portions thereof(as indicated by fig 1), wherein at least one of the first and second surfaces is convex.(fig 1, 22).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mchenry(U.S. Patent No. 3,059,113).

Regarding claim 5, Mchenry discloses a first convex surface (fig 3) to the long conjugate distance side and a second plano surface(fig 3) and a luminous flux passing through a peripheral part of the first surface is reflected at a peripheral part of the second surface, is again reflected at a central part of the first surface(fig 3). McHenry does not specifically disclose the light is imaged in the vicinity of the vertex of the second surface. However, since McHenry graphically discloses the light flux is imaged at the vertex of the lens upon the detector(fig 3, 2) and states that infrared detectors are often used at the limit of sensitivity(col 1, lines 12-15) and so the need for maximum efficiency in the gathering of the radiation, Mchenry obviously discloses the light is imaged in the vicinity of the vertex of the second surface so as to focus the rays upon the detector.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 8, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun (U.S. Patent No. 4,121,890) in view of Medina Pueruerta et al.(U.S. Patent No. 5,638,219).

Regarding claims 2, 3, and 4, Braun, as detailed in claim rejection 1 above, does not disclose aspherical surfaces on both surfaces of the lens. However, Medina Pueruerta et al. discloses aspherical surfaces on both surfaces of the lens (col 3, line 24). It would have been obvious to one skilled in the art, at the time of the invention, to place aspherical surfaces on both sides of the lens, as shown by Medina Pueruerta et al., in the optical lens of Braun, since as shown by Medina Pueruerta et al., aspherical surfaces are commonly placed on both surfaces of a lens so as to correct for spherical aberrations.

Regarding claim 8, Braun, as detailed in claim rejection 7 above, does not disclose the second surface is aspherical. However, Medina Pueruerta et al. discloses the second surface is aspherical (col 3, line 24). It would have been obvious to one skilled in the art, at the time of the invention, to place an aspherical surface on the second side of the lens, as shown by Medina Pueruerta et al., in the optical lens of Braun, since as shown by Medina Pueruerta et al., the second side of a lens is commonly aspherical so as to correct for spherical aberrations.

Regarding claims 10, 11 and 12, Braun, as detailed in claim rejection 9 above, does not disclose aspherical surfaces on both surfaces of the lens.

However, Medina Pueruerta et al. discloses aspherical surfaces on both surfaces of the lens(col 3, line 24). It would have been obvious to one skilled in the art, at the time of the invention, to place aspherical surfaces on both sides of the lens, as shown by Medina Pueruerta et al., in the optical lens of Braun, since as shown by Medina Pueruerta et al., aspherical surfaces are commonly placed on both surfaces of a lens so as to correct for spherical aberrations.

Regarding claim 13, Braun discloses a lens element having a first convex surface (fig 1, 18, col 4, lines 33 and 34), since surface can be curved it inherently could then be concave)to the long conjugate distance side thereof with a reflectance coating on the central portion(fig 1, 18, col 2, lines 45-50) and a light admitting area at the peripheral of the reflective coating(fig 1, 16), and a second convex surface on the opposite side thereof(fig 1, 22) with a reflective coating on the peripheral portions thereof(as indicated by fig 1), wherein at least one of the first and second surfaces is convex.(fig 1, 22). Although, Braun discloses a reflective first surface, Braun does not disclose a reflectance coating on the central portion of the first surface. However, Medina Pueruerta et al. discloses a reflective coating in the central portion of the first surface(fig 3, 4.2). It would have been obvious to one skilled in the art, at the time of the invention, to place a reflectance coating on the central portion of the first surface, as shown by Medina Pueruerta et al., in the optical lens of Braun, since as shown by Medina Pueruerta et al., placing a reflective coating on the first surface, as opposed to a reflective surface which does not reflect the entire light flux(col 2, lines 50-53) is

commonly done since a reflective coating would reflected all of the light flux thus eliminating the loss of light flux each time the light is reflected off of the surface.

Regarding claims 14, a modified Braun in view of Medina Pueruerta et al., as detailed in claim rejection 13 above, does not discloses aspherical surfaces on both surfaces of the lens. However, Medina Pueruerta et al. discloses aspherical surfaces on both surfaces of the lens(col 3, line 24). It would have been obvious to one skilled in the art, at the time of the invention, to place aspherical surfaces on both sides of the lens, as shown by Medina Pueruerta et al., in the optical lens of Braun, since as shown by Medina Pueruerta et al., aspherical surfaces are commonly placed on both surfaces of a lens so as to correct for spherical aberrations.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mchenry(U.S. Patent No. 3,059,113) as applied to claim 5 above, and further in view of Medina Puerta et al. (U.S. Patent NO. 5,638,219).

Regarding claim 6, McHenry , as detailed in claim rejection 5 above, does not disclose the first surface is aspherical. However, Medina Puerta et al. discloses a single lens with multiple reflective surfaces which has an aspherical first surface(col 3, line 24). It would have been obvious to one skilled in the art, at the time of the invention, to place an aspherical surface on the first surface of the lens, as shown by Medina Puerta et al., on the lens of McHenry, since aspherical surfaces as commonly used on the first surface of a lens to correct for spherical aberrations.

Allowable Subject Matter

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a). Therefore, the applicant should renumber claims 21-24 so that the claim they depend upon, claim 25, has a lower number than the presently numbered claims 21-24.

Claims 25 and 26 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art taken either singularity or in combination fails to anticipate or fairly suggest the limitations of the independent claim, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claim 25, with the important feature being the first surface is concave. Therefore claims 25 and 26 are allowed.

Response to Arguments


Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this office action. The early submission of formal drawings will permit the office to review the drawings therein before the application is passed to issue. This will avoid possible delays in the issue process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.

T.J.T.
9/19/01


Georgia Epps
Supervisory Patent Examiner
Technology Center 2800